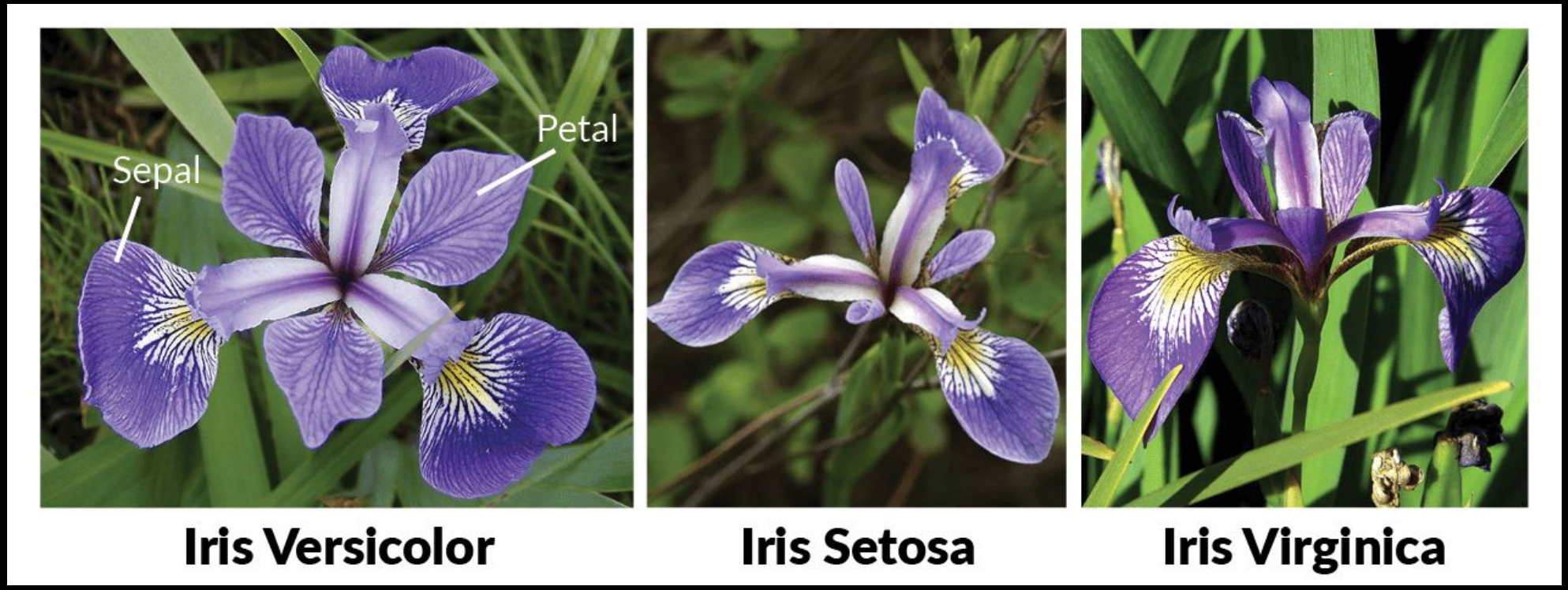
딥러닝 기초

-05-

분류 문제

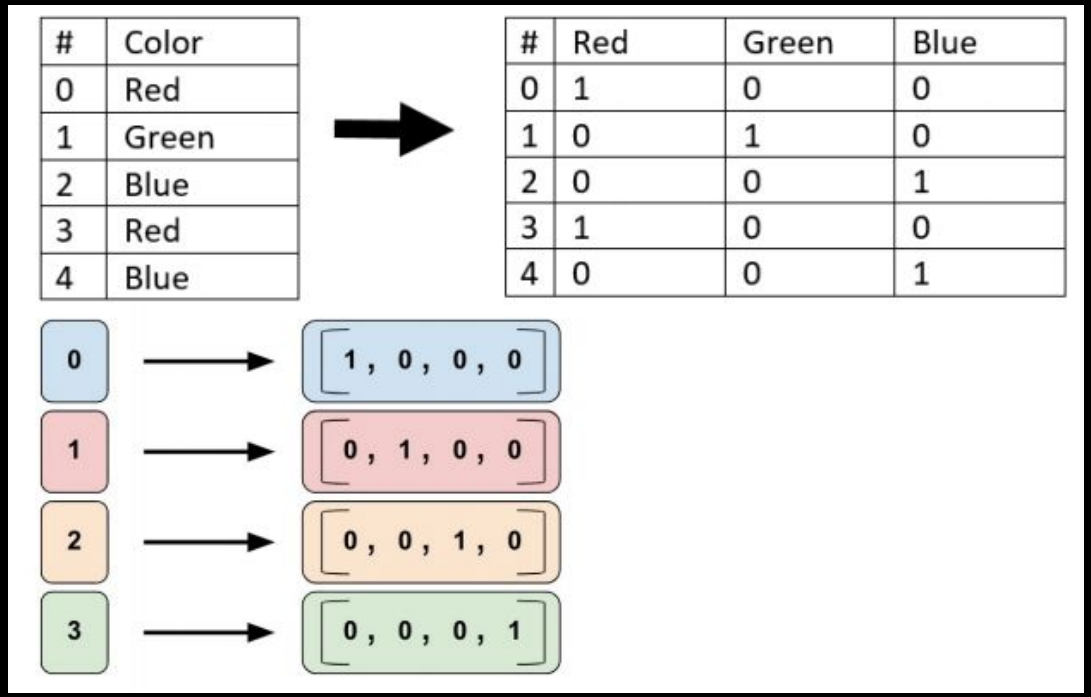
붓꽃 분류

Iris Dataset (붓꽃 분류)



One Hot Encoding

Produces a vector with length equal to the number of categories in the data set. If a data point belongs to the *i*th category then components of this vector are assigned the value 0 except for the *i*th component, which is assigned a value of 1.

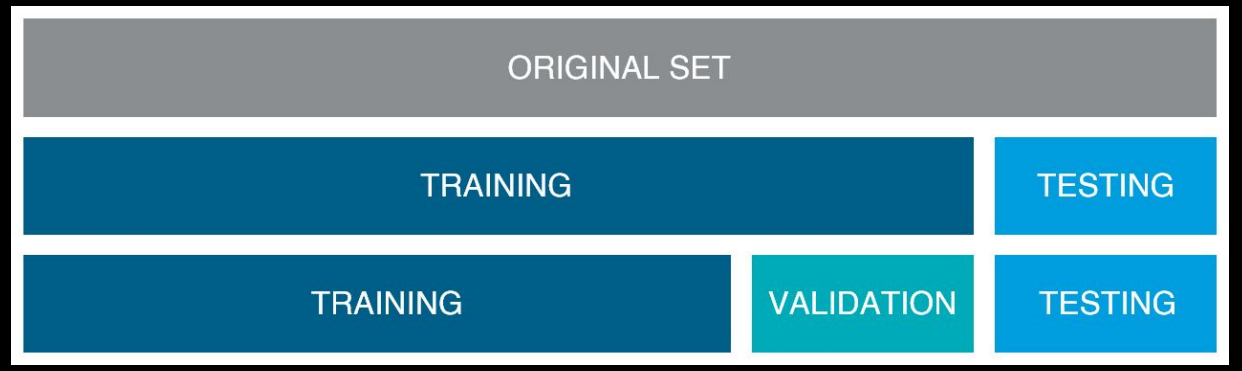


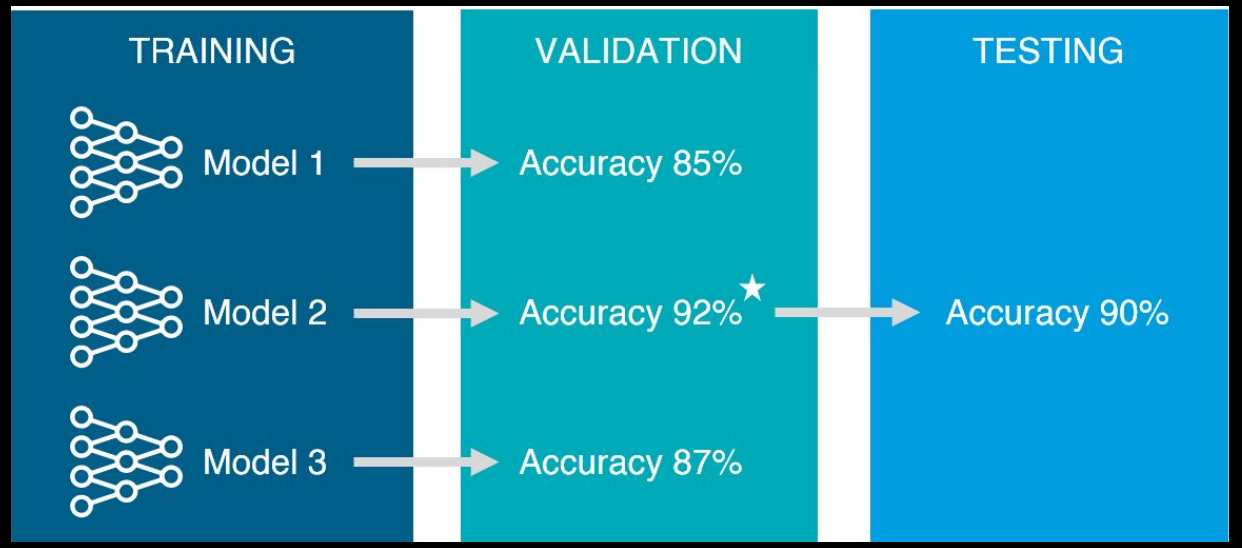
One Hot Encoding

```
# One-hot Encoding 원핫인코딩
import tensorflow as tf

Y = tf.keras.utils.to_categorical(iris.target)
```

Training / Validation / Test sets





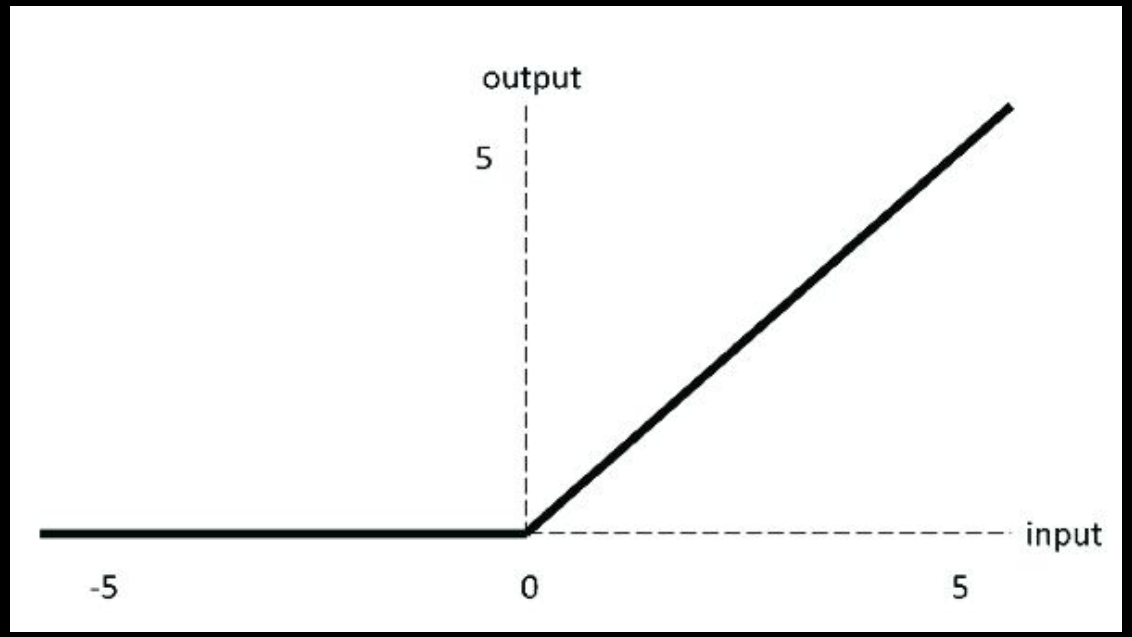
Training / Validation / Test sets

```
# 학습용/테스트용 데이터 분리
from sklearn.model_selection import train_test_split

train_X, test_X, train_Y, test_Y = train_test_split(X, Y, test_size=0.2)
```

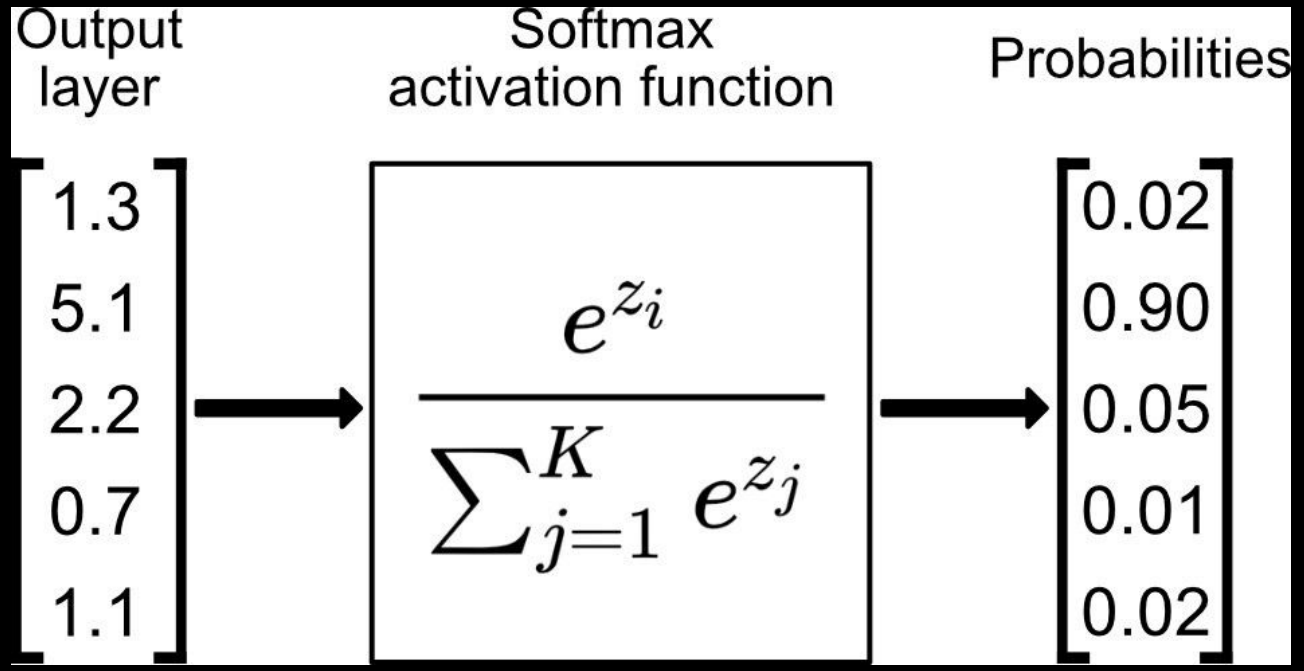
Activation Function : Relu (Rectified Linear Unit)

linear function that will output the input directly if it is positive,otherwise, it will output zero



Activation Function : Softmax

Used as the activation function in the output layer for multi-class classification



Activation Function

```
# 모델링
model = tf.keras.models.Sequential([
                                    tf.keras.layers.Input(4),   # 입력층
                                    tf.keras.layers.Dense(10, activation="relu"),   # 은닉층
                                    tf.keras.layers.Dense(3, activation="softmax")  # 출력층
])
```

Q&A